

Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

## INDEX TO THE FOURTH VOLUME.

## A.

- ABSORPTION*, experiments on lacteal, 301—307. Observations on, 299, 300. Veins have the power of, 310, note; 311, note. Supposed by Majendie to be the effect of mechanical imbibition, 312, 313. Arguments in disproof of Majendie's theory, 314, note. Is a vital selective or attractive action, 314, note. Of shell, 469.
- Acrita*, diffused condition of the nervous and other systems in, 198, note.
- Actinia*, the *Serpula gigantea* described as a species of, 467.
- Adversaria anatomica* of Hunter, specimen of the destroyed, 393.
- Air-bags*, experiments on, in fishes, 182.
- Air-cells*, in birds, 176. Description of, 178—180. Their final intention, 184, 185, note. In insects, 185.
- Air* in the stomach and other cavities, 97. Peculiar case of a woman afflicted with, 98, 99.
- Alligator*, sheds and renews its teeth, 354.
- Allotriandrous* (αλλοτριος, another; ανηρ, male) hermaphroditism explained, 35.
- Ambergris*, the intestinal concretions so called have the beaks of cuttle-fish for their nuclei, 362, note.
- Amphibia*, and birds, great similarity between, xxxvi. In the absence of vesiculæ seminales, 28; and in the presence of abdominal air-cells, 183, 184.
- Amphibious bipes*, anatomical description of, 394.
- Animal-earth*, immense accumulation of at the bottom of bone caves, 473.
- Animal flower*; new marine, 467. (See *Serpula gigantea*.)
- Animals*, the lower, allow of a considerable variation in their temperature of heat and cold, 133. Experiments on, *ib.* The higher have greater power of retaining heat than the lower, 137. In a torpid state digestion, sensation, &c. do not go on, 144. Their food may be divided into two kinds, 126. Variety in the mode of the nourishment of, 122. Life of, its state or stages, *ib.* Subject to great changes by culture, 277.
- Animals* with tentacula, an almost infinite variety of, 469.
- Anspach*, Margrave of, his description of the bone-caves of Gailenreuth, 470.
- Aristotle*, the author of the theory of the vital principle, iv, x. His classes Zootoka and Ootoka, xxviii.
- Argala*, or adjutant crane, its air-cells, 179, note.
- Arteries*; not uniform in their distribution, and why, 187, 188. Contractility and structure of, 253, 254, note.

## B.

- Banks*, Sir Joseph, P.R.S., Mr. Hunter's letter to, on the structure of the crystalline lens, 287, 288.
- Barberry*, irritability of filaments of, 210, note.
- Bats*; in general have no air-cells, except in the lungs, 183. But in the genus *Nycteris* large air-cells extend under the skin, 183, note.
- Beaumont, Dr.*; his experiments on the gastric juice in a man with a fistulous opening into stomach, 96.
- Bees*; observations on, 422. Their anatomy and physiology better understood by the analogies of other insects, 423. Best hives for observing their operations, 424. Their actions arise out of an instinctive necessity, 425, 437. They are not legislators nor mathematicians, 425, 437. Geographical distribution of, 425, and note; 426. Have property to defend, and therefore a sting, 426. Feed in winter, and

Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

- retain a high temperature, 427. Power of generating heat in other insects, 427, note; 428. Are very susceptible of change of temperature, 429. Are cleanly, 429, 445. The society consists of a female breeder, female nonbreeders, and males, 429, 431. Their swarming, 431, 432. Formation of wax, 433. Mode of collecting farina, 433, note; 441. Formation and structure of comb, 435. Royal cell, 436. Oviposition, 438, 446. Larvæ, 439, 465, 442. Pupæ, 440, 442. Bee-bread, 440. Metamorphosis, 443, and note. Seasons of impregnation, oviposition, mellification, and mariticide, 444. Quantity of honey consumed in winter, 445. Queen bee, 446. Abortive experiment, to form, 449. Description of, 449, 450. Number of queens in a hive, 451. Copulation of, 452. Male bee, *ib.* Labourer, 453. Have the female parts, but extremely small, *ib.* Their number in a hive, 454. Tongue, 455. Œsophagus, 456. Honey-bag, 457. Stomach, 457. Intestine, 458. Senses, *ib.* Voice, *ib.* Female organs, 459. Male organs, 460. Sting, 463. Period of life, 465.
- Belchier* on madder, 315, note.
- Bell, Thos., F.R.S.*; his description of the cutaneous air-cells of *Nycteris* quoted, 183, note.
- Bell, Wm., viii.* His experiments on the silk-moth, 461.
- Birds*; similarity of, to reptiles, xxxvi. Characters of the class of, xxxiv. Account of certain receptacles of air in, which communicate with the lungs and Eustachian tube, 176. Before the year 1774, the air-cells of the lungs, and other cavities of the body, not clearly explained, 176. Experiments upon the breathing of, 181.
- Bivalves*; adductor muscle of, 233. Antagonized by elastic ligament, 252. Quantity of contraction of adductor muscle greater than is required, 263.
- Blagden, Dr. C.*; his experiments in a heated room, 131, 132, note.
- Blood*; its coagulation depends on the fibrine, xii. Red globules of, are latest formed, xiii. Its transparency and want of colour in the lobster and snail, its milk-white colour in the slug, its red colour in the earth-worm, 218. Is more loaded with red particles in the higher than the inferior classes, 219. Living principle supposed to be inherent in the, 167.
- Boerhaave* on muscular action, 258.
- Bone*; experiments and observations on the growth of, 315; by means of madder, 315, 316. By inserting shots, 317.
- Bones*; description of, in birds, 178.
- Borrelli*, observations on air-cells of birds quoted, 176, note. Experiment on muscular contraction, 257.
- Brain*, its fibrous structure, xvi, 373. Classes of animals according to modifications of, xvi—xviii.
- Brewster, Sir David, F.R.S.*, his observations on the structure of the lens quoted, 289, note.
- Brodie, Sir B. C., F.R.S.*, his experiments on the brain's influence upon the heart's action and the production of heat, 136, note.
- Buffon*, his observations on a wolf and dog quoted, 322.
- Bulb* of urethra, subservient to distention of glans, 33. Double bulb coexists with double glans in opossum, 33, note.

## C.

- Cachalot*, difference of size in two sexes, 335, note.
- Calendula pluvialis*, 201.
- Camper*; his observations on the air-cells of birds, 176. Erroneously supposes air to enter cranial cells by the meatus auditorius, 180, note. Denies that birds have an Eustachian tube, 181, note. Not acquainted with the external opening of the organ of hearing in fishes, 298; nor with the semicircular canals in the Cetacea, 384.
- Carlisle, Sir A., F.R.S.*; his observations on tæniæ quoted, xxviii. His Croonian Lecture, 256.
- Carp*, experiments on, 132, 147.
- Castrated animals*, of either sex, approach each other in appearances, and have a resemblance to the unnatural hermaphrodite, 47.
- Cetacea* (*cete*, a whale) are true Testiconda, 6, note. Species dissected by Hunter, 332. Constitute an order of animals, 334; which includes the largest, 334, 335; with less variety of form than in the terrestrial orders, 337. Herbivorous species of, 335, note;

- have lungs, warm blood, and other essential characteristics of quadrupeds, 336. Characteristic form of, 337. Why the tail is horizontal, 338 and note, 339. Pectoral fins analogous to anterior extremities in quadrupeds, 338. Differences *inter se* in number of ribs, structure of larynx, and cæcum, 339. Flesh of, has greater specific gravity than beef, *ib.* Bones of, 340—344. Construction of tail of, 344. Fat of, 344, 345. Cellular membrane of, 349. Skin of, 349, 351, note. Cutis is compact cellular membrane, 349. Final intention of its combination with the blubber, 349, note. Elasticity of skin in piked whale, 350; their mode of catching food, 351; teeth of, 352; peculiar mode of development of, 353, 354; mode of shedding and succession resembles those in the elephant, 354. Substitute for teeth in the whales, *ib.* Oesophagus, 357. Stomachs, 357—360. Intestines, 360—362; never contain air, 361. Liver, *ib.* Pancreas, *ib.* Food of, 362. Epiploon, *ib.* Spleens, 363. Kidneys, *ib.* Bladder, *ib.* Capsulæ renales, 364. Blood, *ib.* Heart, *ib.* Arteries, 365, 366, and note. Arterial intercostal plexuses, 365; do not exist in herbivorous species, 366, note. Veins, 367, note. Larynx, 367. Os hyoides, 367. Lungs, 369. Diaphragm, 369. Blow-hole, 370. Brain and spinal chord, 372, 373 and note. Organ of touch, 374. Of taste, 375. Of smell, 376. Of hearing, 378—384. Peculiar sinuses communicating with Eustachian tube, 379. Worms infesting those sinuses, 379, note. Membrana tympani convex outwardly, 381, and note. Discovery of semicircular canals in, 384, and note. Organ of seeing, 384, 388. Absence of lachrymal gland in, 384, note. Muscles of eye and eyelids, 385 and note. Generative organs of, 388—392. Testes always abdominal, 388 and note; their great enlargement, 388, note. Analogies of pelvic bones, 389 and note. Muscles of clitoris and Malpighian canals, 390, note. Fœtal membranes, 390, note. Gestation and number of young, 391 and note. Lactation, 392.
- Chimpanzee*; peritoneal canal of tunica vaginalis obliterated in, 12, note.
- Chylification*; process of, described, 108, note.
- Circulation* of the blood in insects, xxii.
- Classes* of animals according to the brain, xvi. Generative function, xxviii. Heart, xxix. Respiratory organs, xxxii. General structure, xxxiii.
- Clift, Wm., F.R.S.*; his copies of the Hunterian manuscripts include the Croonian Lectures, p. 195 to 267. Experiments on Absorption in Birds, 309. Schemes of the Classification of the Animal Kingdom, xvi. xxviii—xxxvii. Observations on the Anatomy of a Turtle, vi.
- Clitoria*, 200.
- Clitoris*; its specific use, 36.
- Cock*; experiments on a, 153.
- Cold*; how produced, 131. Effects on animals; rather rouses than depresses, 132.
- Convolvulus*, 200, 201.
- Cooper, Sir Astley, F.R.S.*; his experiments on the relative digestibility of different substances, 111, note.
- Coughing*; how performed, 91.
- Cowper*; quoted, 33, note.
- Cremaster*; its use, 5. Its nerves, 6, and note. Does not exist in true testiconda, 6, note. Is supplied by nerves of voluntary motion, *ib.* Some persons retain a voluntary control over it, *ib.* note. Is connected to the testis previous to its descent, 8, and note.
- Crocodile*; approaches the bird in the structure of brain, xix. Its single penis, xxxv. Its organ of hearing, 295.
- Croonian Lectures on Muscular Motion*, No. I. 195; No. II. 224; No. III. 242; No. IV. 251; No. V. 255; No. VI. 267. Some facts relative to Hunter's preparation for, 286.
- Crows*; regurgitate food for their young from the fauces, 455.
- Cryptandrous* (κρυπτος, hidden; ανηρ, man,) *hermaphroditism*; explained, 35, note.
- Crystals of different oils*; advantage of determining exact form of, 348.
- Cuckoo*; hair in stomach whence derived, 93, note.
- Cuscuta*, 200, note.
- Cuticle*; considered as a dead covering, and capable of receiving greater degrees of heat and cold than the living parts underneath, 138.
- Cuttle-fish*; structure of lens in, 286. Hunter's preparations of eye of, 286, note. Organ of hearing of, 294.
- Cuvier*; his opinion of Hunter, v. On the circulation in insects, xxiii. His observations on existing Cetacea, 333, note. On Hunter's paper on fossil bones, 480, note.
- Cyclostomum thermale*, a snail living in thermal springs of 100° Fahr., 134, note.

Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

## D.

*Dalmatia*; fossils of, chiefly ruminant, 472, 476.*Davy, Dr. John, F.R.S.*; his observations on the double auricle of anurous *Batrachia*, xxx. His experiments on the heat of the bonito, 147, note. His experiments on the torpedo, 399, note.*Decidua*; formation of, compared to the effusion of lymph in inflammation by Hunter and V. Baer, 58, note. Cylindrical villi in, described by Weber, 58, note.*Diadelphia*, 201.*Diaphragm*; its rudimentary existence in birds, xxxiv. 177.*Digestion*; observations on, 81 to 121. Of the stomach after death, 116. Its appearances are most frequent in those who die by sudden violence, 119. Different power of in cardiac and pyloric portions of stomach, 107, note. Coagulation of substances not essential to their, 109, note.*Dingo*, 493.*Dionæa muscipula*, 200.*Dog*; experiments on heat of, 145. Observations on the species of, 319. Propagates with the wolf, 320, 323. Same species as the wolf, 328. Variety of, with supernumerary toe, 329, note.*Dormice*; experiments on, 132, 133, 141, 142.*Drowned persons*; observations on, 165. Their situation similar to that of a person in a trance, 166, note. Method of treating, 170, 171, 173, 174.*Dugong*, pp. 360, 361, note.*Duhamel's* theory of growth of bone contrasted with Hunter's, p. 318, note.*Duodenum*, digestion is carried on in, 103, note.

## E.

*Earth-worm*; experiments on heat of, 147, 154. Red blood of, 218.*Eel*; experiments on an, 148.*Eggs*; experiments on, 146, 149, 150.*Elephant*; its cranial air-cells, 180, note. Fossil bones of, found in England, Siberia, &c. 478.*Embryo state*, or first organization of higher animals analogous in construction to full-grown state of lowest animals, xxvi. 243, 268.*Entozoa*; stated by Rudolphi to revive after having been completely frozen, 152, note.*Erection of penis*; caused by compression of the vena dorsalis, 32. Experiment to prove, 32. Cowper's account of muscles causing the compression in opossum, 32.*Eustachian tube*; air received by the, in birds, 180.*Eye*; the pigmentum of, in different animals, 277. Muscles of the, 274, 385. Power of adjustment of, 289, note.*Experiments*; reflection upon, 424.

## F.

*Feathers*; contain a considerable quantity of air, 182.*Female*; when the powers of propagation cease loses many of her peculiar properties, and approaches towards the hermaphrodite, 49.*Feræ*; (the name of a Linnæan order of Mammalia, corresponding with the *Carnivora* of Cuvier,) periodical passage of testes in insectivorous, 6, note. Vesiculæ seminales limited to insectivorous, 27, note.*Fifth pair*; description of some branches of, 193, 194, note.*Fishes*; account of the organ of hearing in, 292. Organ of hearing discovered by Hunter before the year 1760, 293. And described and figured by Casserius in the year 1600, 292, note. Reasons for publishing an account of it, 294. Experiments on the hearing of, 296. On the temperature of, 132, 147. The appearance of the stomachs of, after death, 120.*Flesh-fly*; Hunter's experiment to prove the use of the crop, and the digestive power of the intestine, 105, note.*Fetus*; contents of the pelvis much higher than in the adult, 3.*Fox*, further removed than jackall or wolf from dog, 319.

Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

## INDEX.

499

*Fossil-bones*; description of, from the caverns at Gailenreuth, 470. Have undergone little change of internal structure, 471. Earths which commonly incrust, 472. Three hypotheses of, proposed, *ib.* Proofs of their accumulation during many thousand years, 473. Referred to species of bear different from the present, 474; and to a lion, *ib.* Geographical distribution of animals in relation to, 476. Changes of land and sea indicated by, 476, 477. Proportion of animal matter and earth in, 478.

*Frauenhofer* corrects the dispersive property of the lens in his achromatic object glasses, 289, note.

*Free-martins*; account of, 34. Origin of, 38. Do not breed, 39. A similar circumstance met with in sheep; but they are not free-martins, 40. Description of, 41—43.

*Frogs*, experiment on, 148.

*Frost-bitten*, manner of treating the, 171.

*Functions*, Hunter's classification of, 336.

## G.

*Gailenreuth*, bone caves of, 470—472.

*Gastric-juice*; its use, 96. Its action on the villous coat after death, 119. Dr. Stevens' opinion of the, 115. Observations and experiments in proof of its acidity, 106, note. Contains hydrochloric acid, 121, note.

*Generation*; classification of animals according to, xxviii. Organs of, in whales, 388. In bees, 459. In the silk-moth, 461.

*Geoffroi's* (Mons.) opinion on the organ of hearing in fishes, 297.

*Geoffroy St. Hilaire*, his theory of the cause (*l'ordonnée*) of monstrosities contrasted with Hunter's, 45, note.

*Gestation*; period of, the same in all the varieties of same species, 319. Of wolf is sixty-three days, 324. Of jackall is fifty-nine days, 326.

*Gibraltar*; fossils of, mostly carnivora, 472, 473. Mr. Lyell's account of, 476.

*Gillaroo Trout*; observations on, 126.

*Giraffe*; use of tendon exemplified in the sterno-thyroidei of, 229.

*Gizzard*; description of the, 127, 128. Its motion, 91, and note.

*Glossopetrae*, what, 478.

*Glires* (*glis*, a dormouse), the name of a Linnæan order of Mammalia, corresponding with the *Scalpris dentata* of Hunter, and the *Rodentia* of Cuvier, periodical passage of testes in, 6, note.

*Gray, Mr. J. E.*, reproduces Hunter's observation on the absorption of shell as a new discovery, 469, note.

*Grew*, on the colour of muscles, quoted, 220, note.

*Guinea-pig*; experiments on vesiculæ seminales, 27.

*Gymnotus*; greater part of appropriated to electric apparatus, 414. Air-bladders of, *ib.* The posterior wanting in *Gymn. aequilabiatus*, *ib.*, note. Description of electric organs, 415—418. Nerves of, 418, 419. Lateral nerve in fish, 419, note. Blood-vessels of, 420.

## H.

*Hale*, his Veg. Statics quoted, 203.

*Hall, Dr. M.*, F.R.S.; his observation on the difference between the sleep of hybernating and that of non-hybernating animals, p. 144, note. On the state of circulation and sensation during torpidity, 144, note. On the reflex function, 201, note.

*Haller*, on the *Hernia congenita*, 2, note. His description of olfactory nerve quoted, 191. His queries on muscular action, 257.

*Hambergerus* on muscular action, 258.

*Harvey*; a vital principle is the cause of organization, iv, x. Exists in the egg, x. And in the blood, xi. Ascertains the movements of the gizzards of birds by auscultation, 91, note. Discovers the abdominal air-cells of birds, 176, note. Compares them with the abdominal lungs of serpents and the air-bladder of fish, 184, note.

*Hearing*; organ of in the sepia, 294. In fishes is a link in the chain of varieties which it presents in different animals, 293. Is placed in the cranial cavity in bony fishes, 294; but in the cranial parietes in sharks and rays, 294. In the turtle and crocodile, 295. In whales, 378.

*Heart*; in insects, xxii. In reptiles, xxiv, xxx. Classes of animals according to the

2 K 2

- structure of, xxix—xxxi. Its muscular fibre is striated, 261, note. Soonest acquires due firmness, 271. Of the siren, 396, note.
- Heat*; experiments and observations on animals, with respect to their power of producing it, 131. Variation of, in the same experiment, 136. Young animals and newly formed parts have less power of generating, 134, 135, and note. Power of generating modified by nervous influence, 136. Less evolved during sleep, 144. Power of generating in some fishes, 147, note. In bees, 151; and other insects, 427, note. Power of maintaining in the living egg, 149. In vegetables, 156—164.
- Heautandrous* (εαυρος, himself; ανηρ, man,) hermaphroditism explained, 35, note.
- Hedgehog*; periodical enlargement and displacement of testes, 7, and note. Its vesiculæ seminales, 27. Experiments on, 143. Its heat diminishes when it is at rest, 150.
- Hedysarum gyrans*, 200.
- Hens*, experiments on, 146.
- Hepoona-roo*, description of, 488.
- Hermaphrodite*; classes of, 35, note. Natural and unnatural, *ib.* Dimidiate and quartered, *ib.* note. Description of, 36. Appear externally to be females, 37. Particular description of in black cattle, 41. In insects, 35, note. In a lobster, *ib.* In a dog, 36, note.
- Hernia congenita*; caused by the falling down of the intestine into the scrotum, after the testis, 14. And true hydrocele cannot exist together in the same side of the scrotum, 15.
- Hornbill*, its air-cells extend into all the bones, 180, note.
- Human body*, a knowledge of its construction essential to medicine, 1.
- *subject*; experiments on a, 138—141.
- *hand*, quoted as a remarkable instance of mechanical construction, 202.
- Humboldt*, on the gymnotus, 414, and 420, note.
- Humulus*, 200.
- Hunter, Dr. William*; his observations on the descent of the testis, 2. On absorption, 299, 300.
- Hypsiprymnus*, 487.

## I.

- Ichthyosaurus*; relation of its hinder paddles to lungs, 338, note.
- Incubation*; description of the crop of a pigeon during, 124.
- Inflammation*; does not excite the part to a degree of heat beyond the standard heat of the animal, 143, note.
- Insects*; nervous system of, xvii. Circulation in, xxii. Temperature of, 427. All their joints are ginglymoid, 236, note.
- Internal organs*; modified in shape and position by external form, 336.
- Intestine of a hog*, containing air, see plate xxxvii.

## J.

- Jackal*; observations on, 319. History of a bitch impregnated by a spaniel dog, 325.
- A hybrid female is fertile with a dog, 326.
- Jaw* (lower) in birds, is supplied with air, 180.
- Jenner, Dr.*; his experiments quoted, p. 142.
- Jerboa*; its anatomy, 393. Affinities to bird, 393, and note.

## K.

- Kangaroo*; described, 485. Its teeth, 485, 486, and note. Mammary foetus of, 485.
- Disproportion of hind legs less in young, 486.
- Keill*; his observations on optics, 275.
- Knox, Dr.*; criticizes Hunter's account of the development of the teeth in the Cetacea, 353, note.

## L.

- Leeches*; experiments on, 147, 148.
- Leenwenhoek*; his observations on the fibrous structure of the lens, 289. And on the laminated structure of the whale's cornea, 386.



Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

## INDEX.

501

- Lens, crystalline* ; its laminated and fibrous texture, 286, 289, note. Its supposed muscularity, 288, 290, note. Is not perfectly achromatic, 289; nor is such a lens required in the eye, 290. Its layers do not progressively increase in density as they approach the centre in the horse, 290, note.
- Life*; power of preserving less in young animals and new-formed parts, 134, 158. Principle of, defined, 167.
- Linnæus*; characters of the classes of animals, xxix. Quoted, 201.
- Lister*, and *Musgrave, Dr. Wm.*; their experiments on the absorption of coloured matters by the lacteals, 303, note. Did not consider whether the veins had or had not any share in absorption, 304, note.
- Locomotion*; not given to all animals, 203. Chief purposes for which designed, 203. External resistance essential to, 246.
- Lonicera*, 200.
- Lungs*; description of, in birds, 177.
- Lyell*; his *Principles of Geology* quoted, 476.

## M.

- Macropus*, 485, note.
- Majendie, M.*; his experiments on vomiting, 91, note. Experiments on digestive power in small intestines, 103, note. On the fifth pair of nerves, 190, note. His opinions on absorption, 312–313, note.
- Mammalia*; Linnæus's class of, adduced by Hunter with reference to their mode of nourishing the young, 123.
- Marchantia*; irritability of filaments in, 210.
- Marks*, distinguishing; belonging equally to both sexes, 45.
- Marshall*, On Recruits, quoted, 6, note.
- Marsupiated*; their mammary muscle, 392, note. Their double superior cavæ, 393, note. Their mode of propagation described, 482, note.
- Mayo, H., F.R.S.*; his *Physiology* quoted, 205, note; 259, note.
- Medusa*; exhibits an early stage in the development of muscular fibre, 268.
- Mesembryanthemum*, 201.
- Mice* (common); experiments on, 145.
- Miles, Henry*; his eye retained its power of adjustment after extraction of lens, 290, note.
- Mimosa pudica*, 200. Experiments on, 205. Structure of irritable intumescence of leafstalk, 204, note.
- Mirabilis*, 201.
- Monotremata* (μονος, unicus; ῥημα, foramen,) ; an order of ovoviviparous mammalia, so called, because in them the fæces, urine, and generative products are expelled by one and the same foramen, 6.
- Monro, Prof. A.*; argues against lymphatic absorption, from supposed absence of lymphatics in oviparous animals, 308.
- Monstrous appearances*; definition of, 44. Classification of, *ib.*, note. Not a matter of mere chance, 45. Their cause lies in the original germ, *ib.*
- Mule*; its occasional fertility conjectured to depend on a monstrous condition of its generative organs, 319.
- Mullet*; description of its gizzard, which is lined with cuticle, 129, and note.
- Muscles*; microscopic structure of voluntary and involuntary fibre, 260, note. Condition of contracted and relaxed fibre, 261, note. Muscles involuntarily contracted will not relax by the will, 262. Contraction or stiffening of after death, 264, 267. Relaxation of, 265, 266. Elasticity of, 265. Relation of density of to strength, 267. Fallacy of experiments on muscles in the dead body, 268. Density of particular muscles according to use, 269, 270. Increased by constant exercise, 271. Use of oblique, 274. Their different specific gravity in different animals, 182. Contractility of muscular fibre known to Lycus of Macedon and Herophilus, 195, note. Self-motion most conspicuous in animals, but exists in vegetables, 196. Three kinds of self-motion, 197, 199. Muscles act by vibration, 207. Vibrations longer as muscle is weaker, 208. Contraction of, stronger than their mechanical resistance in dead body, 267. Four kinds of stimulus to the contraction of, 210. Causes of contraction of, 264. Actions of involuntary muscles never tire, 211. Nor involuntary actions of voluntary, 212. Sensation of fatigue is therefore in the mind or nerves, though re-

Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

## 502

## INDEX.

ferred to the muscles, 212. Performing voluntary actions have large nerves, 212. Voluntary power lost with the division of the nerve, but not the susceptibility of impressions, 213. Power of involuntary muscles illustrated by the colon of the horse, 213. Their sphinctorial power of contraction or tonicity, 214. Violent voluntary actions will produce the involuntary, 215. Fat in muscles characteristic of age, 216. Muscles of respiration must be involuntary for breathing, voluntary for uttering vocal sounds, 217. Colour of muscles, *ib.* Its relation to the colour and quantity of blood distributed to them, 219; and to their action, *ib.* Paralytic muscles become pale, and somewhat gelatinous and transparent, 220. Swelling of muscles, 221. Temporary and permanent increase from action, *ib.* Effects of habit on muscles, 222. Permanent increase of size greater in involuntary than voluntary, 223. Mechanical effects of muscles, 224. Their external figure, 225. Their different constructions, 226; and their effects, 239. Their situation, 227. Their attachment to tendons, 232. Their origin and insertion, 233. Their adaptation to joints, 235–238. Mechanical effects of, 242. Divided into three kinds, 246. Gradational development of muscles in animals, 244. Impossible to ascertain absolute force of, 248. Combination of elasticity with muscularity in blood-vessels, 253. Contraction of a muscle results from uniform approximation of its particles, 255. Increases in thickness, density, and specific gravity during contraction, 256. Experiments with the heart of dog and sheep, to ascertain whether a muscle loses bulk during contraction, 259.

## N.

*Narwhal*; tusks of, 352, and note.

*Natural history*, 292.

*Negro*; muscular part of gastrocnemius of, shorter than in European, 263.

*Nerves*; description of the, which supply the organ of smelling, 187. Constancy in their different origins and distributions indicate particular uses, 187. Organs with different sensitive endowments have nerves from different parts of the brain, 189, 190. Nerves give the sensations they are destined to convey in whatever part of their course the impression is made, 191. Some animals devoid of, 198.

*New South Wales*; description of some animals of, 481.

## O.

*Oblique muscles*; the use of the, 274. In the Cetacea, 385, note.

*Ogle, Thomas*; his case of a young woman who poisoned herself in the first month of pregnancy, 55.

*Oil*; its different situation in the bodies of different fishes described, 182.

*Opossum*; Mr. Hunter's experiments to determine mode of generation in, 462.

*Orang-utan*; tunica vaginalis communicates with abdomen, 12, note.

*Organ of hearing*; in fishes is placed on the side of the cavity of the skull, 294. Increases in dimension with the animal, 295. Described in the cod, salmon, ling, ray, and jack, 295. Nerves of the, 296, and note. Experiments on, 296.

*Ornithorhynchus* (*opvus*, avis; *πυγχος*, a beak,); its penis relates solely to the passage of the semen, 30, note. Ovum of, 58, note.

*Ostrich*; its abdominal air-cells figured in Perault's Memoirs, 176, note. Mentioned by Hunter, 182. Has no air in the humerus, 179.

*Ovarium*; experiments on extirpating it, 50.

*Ovum*, human, 59, note.

*Owl*; air admitted to interior of cranial bone by Eustachian tube, 180. Compared with hawk with reference to stimulus to action, 202.

## P.

*Pea-hen*; change of plumage in, from female to male, 49.

*Peccari*; its vesiculæ seminales, 26, note. Its stomach, 103.

*Pelican*; its air-cells described, 185.



Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

## INDEX.

503

- Pelvis*; side view of, in which the vasa deferentia did not communicate with the vesiculæ, and the vesiculæ did not communicate with the urethra, 23.
- Penis*; small in castrated animals, 30. Description of, 30. Not so large in erection in a cold as a warm day, 30. In a horse just killed the cells appear muscular, and contracted upon being stimulated, *ib.* note. Erection, how produced, experiment on, 32, note. Its specific use, 36. Impossible for one animal to have a penis and clitoris, *ib.* Case of a gentleman who had the nerves of the glans destroyed, 191, note. Case of a serjeant of marines who lost the greater part of the body of the, 191, note.
- Perennibranchiata*; structure of heart in, 395, note. Nervus lateralis in, 419, note.
- Petaurus*, 488, note.
- Phalæna*, 201.
- Phalangista*, 489, note.
- Phascogale*, 490, note.
- Pheasant*; an account of an extraordinary, 44. Change in feather from a hen to a cock, 48. Does not generally take place till an advanced period of the animal's life, 48. Supposed to be merely the effect of age, and obtain to a certain degree in every class of animals, *ib.* May be produced by injury or disease of ovarium at any period of life, 48, note.
- Philosophical Transactions*; Hunter's papers are printed in those for the years 1766, 1772, 1773, 1774, 1775, 1776, 1778, 1779, 1780, 1782, 1785, 1787, 1792, 1793, 1794.
- Pigeon*; change in structure of crop when breeding, 124.
- Pigmentum of the eye*; always corresponds with the hair and skin, 278, 279. Description of various, 277 to 285.
- Placenta*; structure of the, 60. Dissection of a, 61. Description of a, 63 to 65; note on, p. 67. Of a monkey, described, 72. Modifications of in the feræ, rodentia, ruminants, mare, and sow, 70, note.
- Polypus*; gemmiparous offspring, compared with the young of mammalia while nourished by the parent's secretion, 122. Moves from stimuli without sensation, 200. Its actions contrasted with those of the mimosa, 200, note. Does not sleep, 206. Is little more than a muscular bag, 244. Has no anus, 468. The ciliobrachiata have, 468, note.
- Porcupine*; its cranial air-cells, 180, note.
- Porpoise*; digestion carried on in first cavity of stomach, 104, note.
- Potoroo*; description of, 487.
- Pregnancy*; appearances after death in first month of, described, 55. No ovum detected, 57.
- Principle of life*; not wholly confined to animals, or animal substance, 149. Possessed by eggs, *ib.* Definition of, 167.
- Prostate gland*; wanting (or rather is bifid) in the bull, buck, and all ruminating animals, 31, note.
- Prout*; Observations on Digestion quoted, 108, 109, note. Difference of contents of rectum in dogs fed on animal and vegetable food, 114, note.
- Puppy*; experiments on a, 143.

## Q.

- Quadrumanus* (four-handed: the name of an order of mammalia, including apes, monkeys, and lemurs); position of testes in, 10.

## R.

- Rabbit*; experiment on a, 146.
- Raptorial birds*; female larger than the male in most, 46, note.
- Reaumur*; his Experiments on Digestion quoted, 81, 84, 86.
- Recurrent arteries*; mechanical cause of, 13. Recurrent nerves explained on similar principles, 13, note.
- Regurgitating animals*, 455.
- Relaxation in vegetables*, 206.
- Reptiles*; the creeping invertebrata, so called by Hunter, 161.

Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

*Retina*; observations on the, 284. Is so transparent as to allow light to pass through, 284.

*Rodentia*; genera of, with two superior venæ cavæ, 393, note.

*Rumination*; experiments on, 94, note.

*Ruptures*; the intestines sometimes in contact with the testis, 2.

*Russell, Dr.*; Hunter's anatomy of the jerboa quoted from his History of Aleppo, 393.

## S.

*Sauvages*, on muscular action, 258.

*Scarpa*; communicates to Hunter his intention to publish on the olfactory nerves in 1782, 189.

*Secretion*; in the crop of breeding pigeons, 124.

*Seed*; explanation of, 34.

*Seeds*; of vegetables, same experiments on, as on eggs of animals, 164.

*Semen*; described, 20. Can be absorbed in the body of the testicle, and in the epididymus, 25.

*Senses*; defined, 198. Consciousness in animals of atmospheric changes not referable to any of the senses, 199.

*Sepia*; the class so called has the organ of hearing, 296; its difference from that of fishes, 294, note.

*Serpula gigantea*; anatomical remarks on, 467, note.

*Sexes*; difference of size of the different, 46, and note.

*Shark*; its muscle denser than that of cod or salmon, 182.

*Shaw, Dr.*; considers Mr. Hunter as the person most capable of determining the natural affinities of the nondescripts from New South Wales, 481. Refers the marsupialia of New South Wales to the Linnæan genus, Didelphys, 484, note.

*Shell-fish*; have the power of removing part of the shell by absorption, 469.

*Shirach*; his Observations on Bees, quoted, 447.

*Silk-Moth*; experiments on impregnation of, 461—463.

*Silurus electricus*; electric organs of, 421, note.

*Siren lacertina*; anatomical description of, 394. Where found, *ib.* Linnæus' opinion of, 394, note. Has both lungs and gills, 395. Respires principally by the branchiæ, 395, note. Structure of its heart, 396, note. Of its female organs, 397, note.

*Skull*; manner of dissecting the nerves out of the, 189.

*Sleep of plants*, 201.

*Sloth*; speculation on the tenderness of its flesh, 272.

*Slugs*, black; experiments on, 147.

*Smallpox*; communicated by mother to fœtus, 74. Death of the part is produced by variolous inflammation, which is the best characteristic of the disease, 76. Is confined to external surfaces, the mouth and throat, 77.

*Snail*; its kidney discovered by Hunter, xxiv. Experiments on, 147.

*Snakes*; in general have but one lung, 183, note.

*Soft palate*; use of its muscles in violent exertions of the body, 249.

*Song of birds*; use of air-cells in, 185, 186, note.

*Spallanzani*; his Observations on Digestion quoted, 81, 86, 94. Assigns heat as an immediate aid to digestion in the snake, 87.

*Sparrow*; periodical variation in size of testes, 29. Sometimes removes its eggs, 423.

*Species*; incapacity of propagation in two proves them distinct, 319. Capacity in the hybrids of propagating *inter se* an intermediate variety establishes the identity of two supposed distinct; but this proof is yet to be obtained in reference to dog and wolf, 324, note.

*Spermaceti*; description of, 346, 348. Teeth of whale, 352, and note.

*Spermatic artery*; its origin, 3. Its course, 4.

*Spiders*; have not air-cells diffused through the body, as in flying insects, 185.

*Squatinæ*, or monk-fish; external orifices of the ears, 296, note.

*Stimulus and irritation*; difference between, 197.

*Stomach*; is not much excited when exposed and handled, 91. Need not act in vomiting, *ib.* Different forms of, 103.

*Subordinate groups*; difficulty of determining, from intermixture of characters, 484.

*Susceptibility of impressions*, while retained, may lead to recovery of vital actions, 169.

Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

## INDEX.

505

*Sympathy*, in vegetables, 207.*Swammerdam*; his experiment on a frog's heart, proving that a muscle diminishes in bulk when it contracts, 257. His minute observations on the structure of the bee, 422.*Swan, Joseph, Esq.*, his Illustrations of the Comparative Anatomy of Nervous System quoted, 419, note.

## T.

*Tænia hydatigena*, 286.*Tapao-tafa*, description of, 490.*Tench*, experiments on, 149, 154.*Tendons and fusciae*, their uses explained, 228. Bone substituted for tendon in legs of birds and bodies of fish, 231. Attachment of muscles to, 232.*Teredo navalis*, supposed to bore backwards, 469.*Testiconda*, what animals are truly so called, 7.*Testis*; its situation in the foetus, with its descent into the scrotum, 1. Formed in the abdomen, *ib.* In the foetus, explains several things in ruptures and hydrocele, 2. its shape and figure, 3. Reckoned among the abdominal viscera, *ib.* Situated immediately below the kidneys, *ib.* Is attached to the psoas-muscle, *ib.* The trunk of the aorta more distant from the right testis than the left, *ib.* Its arteries, *ib.* Its veins are analogous to its arteries, 4. Its nerves, *ib.* Its epididymis, 5. Its vas deferens, *ib.* Testicles—the cremaster-muscle different in the foetus and in the adult, *ib.* Testis, connected with the parietes of the abdomen, 6. Testes of the hedge-hog and sheep described, 7. Its peritonæal coat, 8. Its descent, 9. Frequently happens between the second and tenth year; the failure in their descent originates in themselves, 16. Not therefore necessarily incapable of performing their function, 18, note. Method of treatment, 16, 18. Variations of, in the sparrow, buck, land-mouse, &c., 29. Penis, urethra, and all the parts connected with them, subservient to them, *ib.* An animal deprived of his when young retains more of the original youthful form, and resembles the female, 47.*Thermometer*; explanation of a, 136.*Thompson, Prof. John*, demonstrates experimentally the muscularity of small arteries, 254, note.*Tiger-lily*, irritability of style, 210, note.*Torpedo*; its large nerves in relation to voluntary power of giving shocks, 212, 409. Mr. Walsh's account of, 398. Hunter's anatomical observations on, 409. Large size of nerves supplying electric organs, 412.*Torpidity of animals*; in warm climates, instances of, 88, note. No chemical change in the circulating blood during, 135, note. And sleep, difference between, 144. Different effects produced by, natural and superinduced, 151.*Tragopogon*, 201.*Trout, Gillaroo* (alias *Gizzard*), description of the, 126, 129.*Tubuli uriniferi*, injected by Hunter, xxiv.*Tusk*, definition of, 352.*Tyson*; his opinion of the independent function of the vesiculæ seminales, and reasons for, from comparative anatomy, 26, note. Assigns a solvent menstruum as the cause of digestion, 84, note. His discovery of the arterial plexuses in Cetacea, 366, note.

## U.

*Univalves*, characterized by having the intestine reflected, 468.

## V.

*Vallisneri*, his observation on the gizzard of birds quoted, 83.*Vegetables*, their power of producing heat, 156. Comparison with animals in respect to age of parts, 158. Experiments on seeds of, alluded to, 164.*Vesiculæ seminales*; described, 20. Considered as reservoirs of the semen, *ib.* This opinion erroneous, *ib.* Compared with the semen of a living man, different from the mucus found in these vesiculæ, 21. Discharge from them not seminal, *ib.* In the human subject do not contain the semen, *ib.* In some animals no duct leading from them to the prostate glands, 26. No peculiar sensation of any kind felt in them, 25.

VOL. IV.

2 L

Cambridge University Press

978-1-108-07960-0 - The Works of John Hunter, F.R.S.: Volume 4

Edited by James F. Palmer

Index

[More information](#)

## 506

## INDEX.

In the horse, boar, rat, beaver, guinea-pig, and hedge-hog, 26—27. Third vesicula in the horse, 26, note. Nothing analogous to them in birds, 27. This is equally applicable to amphibious animals, and to that order of fish called rays, 28. Not for the purpose of containing semen, 28; but are subservient to generation, 29, 148. Their function considered, by J. V. Horn and Tyson, to be to add an independent secretion to the semen, 26, note.

*Viper*, experiment on a, 147.

*Vomiting*, how performed, 92.

## W.

*Walsh, John, F.R.S.*, on the electric property of the torpedo, 398.

*Whalebone*, description of, 354—357.

*Whales*; on the structure and œconomy of, 331—392. (See *Cetacea*.) Difficulty of investigating their structure, 331. Hunter engages a surgeon to go out to Greenland to dissect, 332. Ribbed and elastic skin in piked, 350. The largest species, 354, note. Description of whalebone of, 354. Piked and Mysticete have a cæcum, 360; as also the herbivorous Cetacea, 360, note. Their olfactory nerves, 377, note.

*Wha-Tapoua-Roo*, 489.

*White, John, Esq.*, zoological appendix of his voyage quoted, 481.

*Wolf*; observations on the, 319. Is impregnated by a greyhound; brought forth four puppies, 323. A hybrid female is fertile with a dog, 324.

*Wollaston, Dr., F.R.S.*, on the vibratory nature of muscular action, 208, note.

*Woodcock*, its air-cells compared with those of the ostrich, 182.

## Y.

*Yarrell, Wm., S.Z.S.*, on the change of plumage of hen pheasants quoted, 48, note.

On the varieties of the trout, 130, note.

*Yolk*, a substance originally formed with the primordial germ; but reserved for the nourishment of the ovipara after exclusion from the egg, 122.

*Young, Dr. Thomas, S.R.S.*, his theory of the muscularity of the lens, 290, note.

## Z.

*Zoological Society*, Proceedings of, quoted, 352, note; 393, note.

## FINIS.